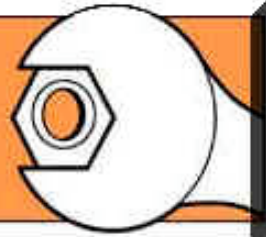




DAEWOO

SERVICE BULLETIN



LIFT TRUCK SERIES

D20S-3 D25S-3 D30S-3
G20E-3 G25E-3 G30E-3
GC20E-3 GC25E-3 GC30E-3
G20P-3 G25P-3 G30P-3
GC20P-3 GC25P-3 GC30P-3

April 13, 2004

CODE 4200

LT4200-D4

SUBJECT: Troubleshooting the G5 Brake System (REV: 8/18/04)

The G5 brake system has experienced issues related but not limited to the following: brake linkage adjustment, air in the system, pedal to the floor, and brake fade after long runs. Included in this bulletin is a troubleshooting guide to assist in identifying the true problem based on truck symptom. The adjustment instructions within the service manual are unclear so we have also included proper adjustment procedures for the brake and inching controls that should be easier to follow.

On some trucks, air in the brake lines has been attributed to the common oil return connection for steering and brakes. This connection is located at the top tank port of the brake valve. The factory long ago eliminated this connection in favor of separate lines and only certain trucks are suspect. Refer to Technical Bulletin Code 4200, SUBJECT: BRAKES DRAGGING WHILE STEERING, Aug. 8, 2001 for applicable truck serial numbers.

Brake valve improvements have been made resulting in new part numbers. A215224 was replaced by A215295, which recently has been replaced by A215296. The latest part number is now being installed on new trucks. The brake valves are interchangeable and the parts system links will always supply the latest part available regardless of which part number is ordered. The attached truck serial number list identifies these changes.

Be sure to change the drive axle oil as recommended in the Operation & Maintenance Manual for normal applications. Severe applications may require increased oil change intervals. Contamination and degradation of the special additives within the specified oil over time can affect braking performance. SAE 50 weight oil is no longer recommended for use in the drive axle. Refer to Technical Bulletin Code 7500, SUBJECT: RECOMMENDED OIL LIST, Rev. 10/20/03 for the proper oil to be used.

Troubleshoot - G5 Brake System

1. BRAKE FADE ON LONG RUNS:

- 1.1. Change the drive axle oil if it has not been changed per recommendations.
- 1.2. API TO-4 SAE 30 wt. is the correct oil for the drive axle. Do not use SAE 50 wt. oil as previously recommended. Refer to Technical Bulletin Code 7500, SUBJECT: RECOMMENDED OIL LIST, Rev. 10/20/03

2. CHECK BRAKE & INCHING LINKAGE ADJUSTMENTS:

- 2.1. Set height of pedals to correct position.
- 2.2. Make certain the brake valve spool is not extended:
 - 2.2.1. If connecting link (A211483 & A211485) is loose - setting is good.
 - 2.2.2. If connecting link is tight - reposition the spool clevis up or down the brake valve spool threads so the connecting link is loose.
- 2.3. Check the inching linkage.
 - 2.3.1. Set inching - brake pedal pick up point.

3. IF BRAKES FEEL SPONGY AND AIR IS IN THE SYSTEM:

- 3.1. Check all pump suction lines for loose connections and brake lines for leaks - tighten fittings if loose.
- 3.2. Check linkage for proper adjustment, see step 1 above.
- 3.3. Bleed the brakes:
 - 3.3.1. Trucks with separate brake and steering return oil lines bleed as normal.
 - 3.3.2. Trucks with common steering and brake oil return lines, follow bleed procedure described in Technical Bulletin Code 4200, SUBJECT: NEW BRAKE VALVE REQUIRES NEW BLEED PROCEDURE, OCT. 23, 2000 to include cycling of steering wheel.
 - 3.3.3. If bleeding still does not resolve the problem:
 - 3.3.3.1. Check top port of brake valve for common steering/brake oil return fitting:
 - 3.3.3.1.1. If brake valve has a tee fitting - follow Technical Bulletin Code 4200, SUBJECT: BRAKES DRAGGING WHILE STEERING, AUG. 8, 2001 explaining how to separate the return lines.
 - 3.3.3.1.2. If brake valve has an elbow fitting - no further action is required.

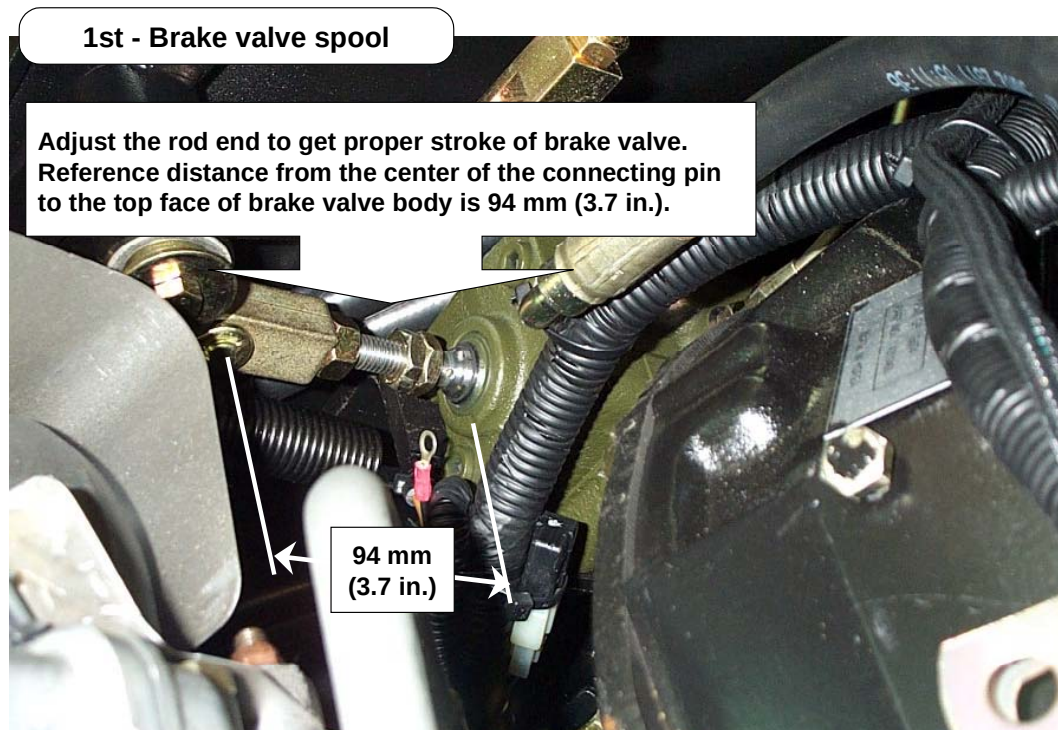
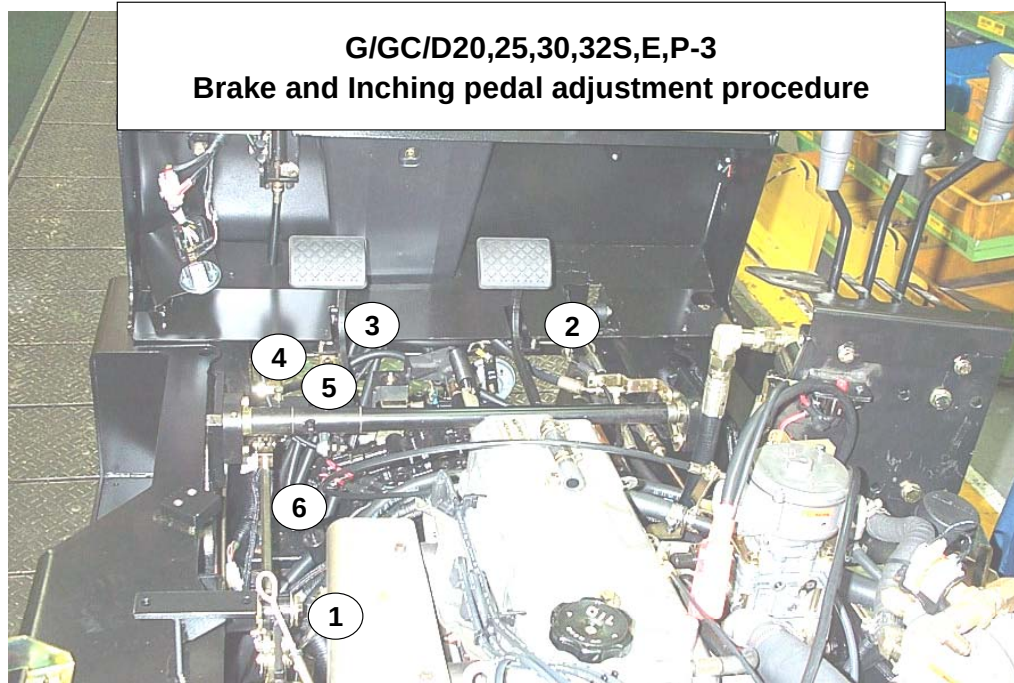
4. TEST BRAKE VALVE:

- 4.1. Remove outlet tube and plug brake valve - bleed while tightening plug - apply pedal force:
 - 4.1.1. If it holds pressure and pedal does not drop - assume brake valve is good.
 - 4.1.2. If it does not hold pressure and pedal drops - replace brake valve.

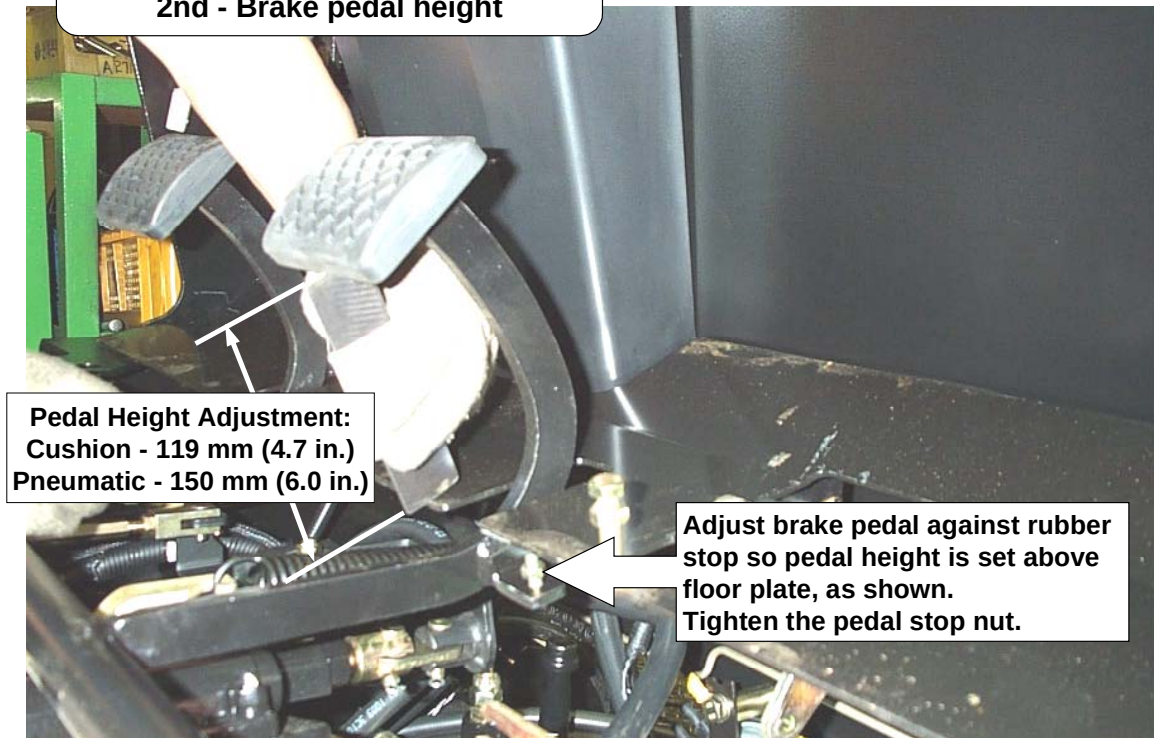
5. CHECK FOR POSSIBLE WHEEL PISTON SEAL LEAKAGE:

- 5.1. Check axle oil level:
 - 5.1.1. If normal - assume no leaks.
 - 5.1.2. If oil level is high - check for possible piston seal leaks:
 - 5.1.2.1. Remove brake line at one wheel end and install plug into tube - bleed line while tightening plug - apply pedal force:
 - 5.1.2.2. If the pedal goes down - assume the piston seals on the unplugged side are bad - replace them.
 - 5.1.2.3. If the pedal holds - assume seals are good and repeat test on the opposite side.

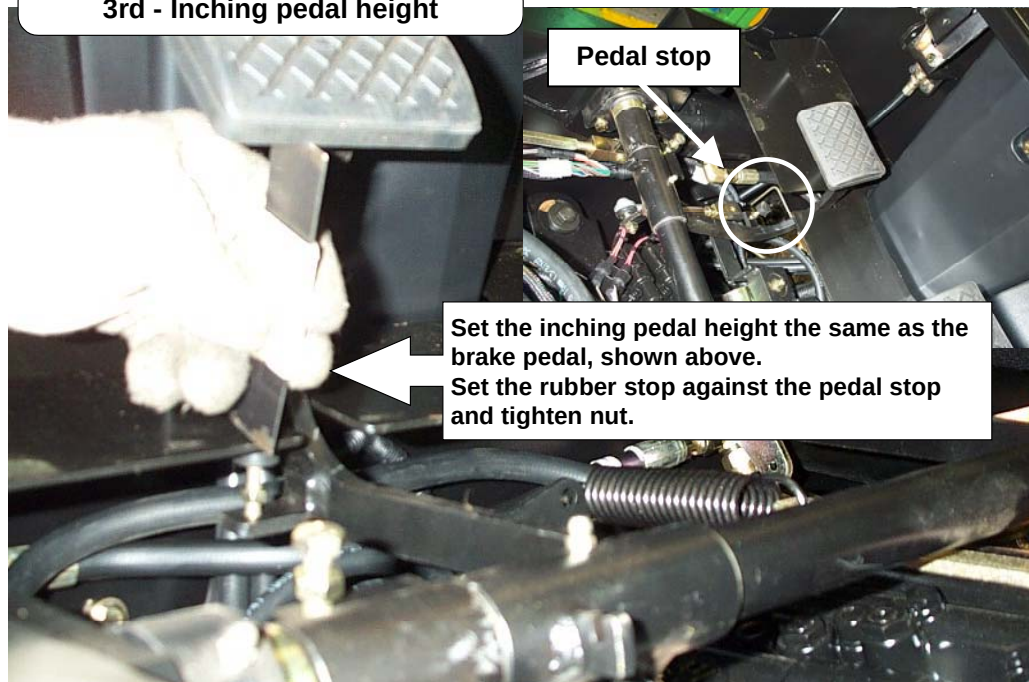
Adjustment - G5 Brake and Inching Linkage



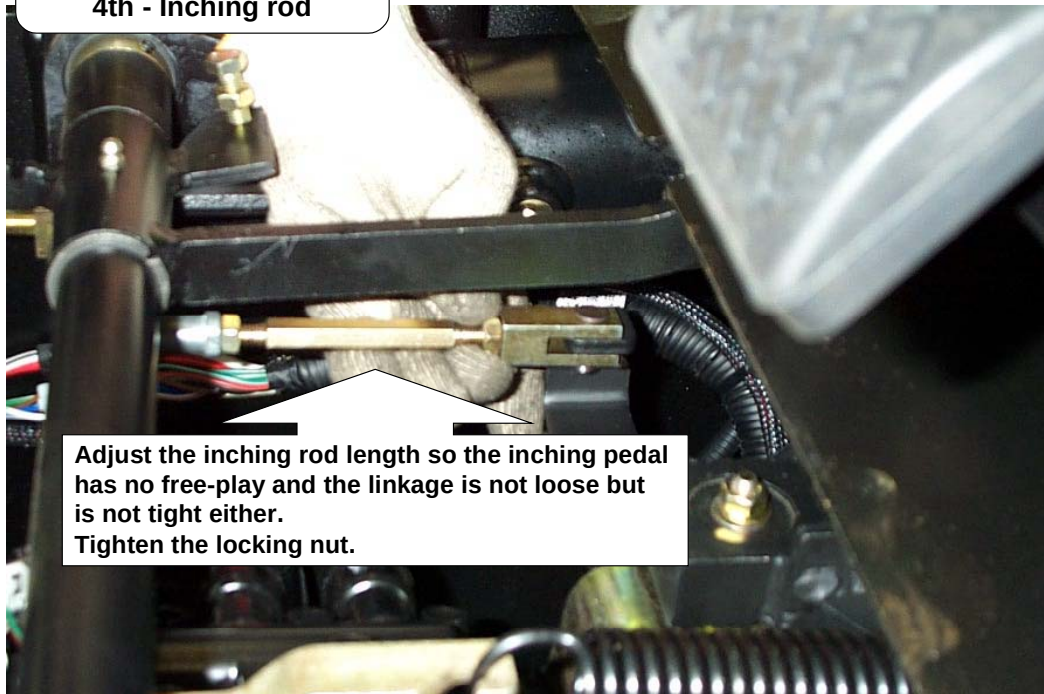
2nd - Brake pedal height



3rd - Inching pedal height



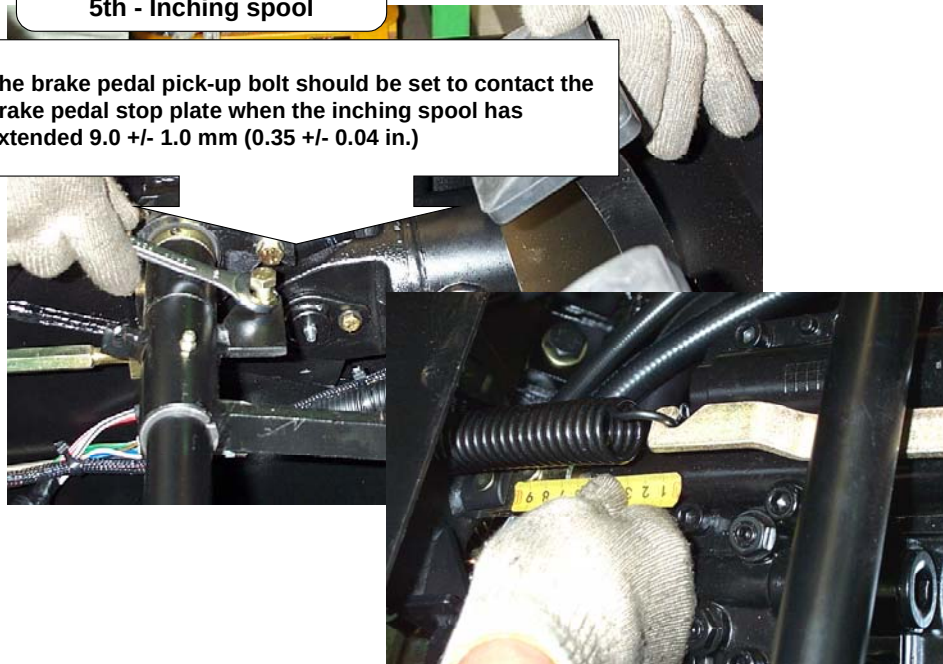
4th - Inching rod



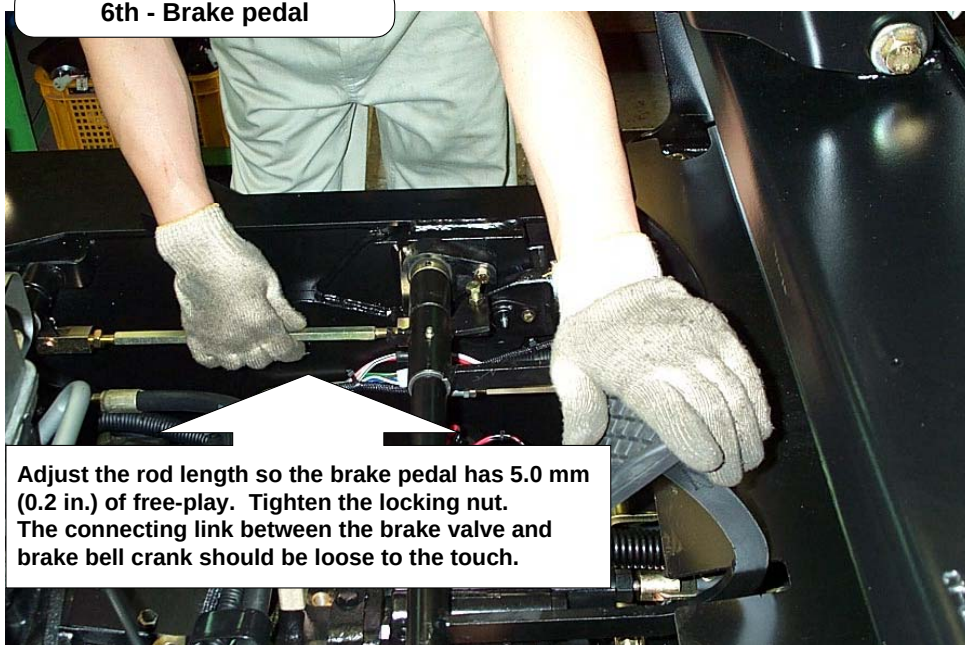
Adjust the inching rod length so the inching pedal has no free-play and the linkage is not loose but is not tight either.
Tighten the locking nut.

5th - Inching spool

The brake pedal pick-up bolt should be set to contact the brake pedal stop plate when the inching spool has extended 9.0 +/- 1.0 mm (0.35 +/- 0.04 in.)



6th - Brake pedal



BRAKE VALVE CHANGES BY TRUCK SERIAL NUMBER

MODEL	A215224 Brake Valve D503307 Seal Kit	A215295 Brake Valve D503307 Seal Kit	A215296 Brake Valve D504734 Seal Kit
D20/25/30/32/33S-3	90-03904 ~ 90-08703	90-08704 ~ 90-10682 E5-00510 ~ UP	90-10683 ~ UP FK-00336 ~ UP GP-00122 ~ UP
G20/25/30/32E-3	CW-00102 ~ CW-03092 CX-00199 ~ CX-00636	CW-03093 ~ CW-04192 CX-00637 ~ CX-08134 DX-00219 ~ UP	CW-04193 ~ UP CX-08135 ~ UP GA-00001 ~ UP G9-00102 ~ UP
GC20/25/30/32E-3	CU-00115 ~ CU-00196 CV-00747 ~ CV-02716	CU-00197 ~ UP CV-02717 ~ UP DY-00192 ~ UP	FP- 00097 ~ UP FQ-00110 ~ UP
G20/25/30/32/33P-3	D2-00001 ~ D2-02819	D2-02820 ~ D2-03796 DZ-00154 ~ UP	D2-03797 ~ UP GB-00170 ~ UP GQ-00097 ~ UP
GC20/25/30/32P-3	DM-00001 ~ DM-01059	DM-01060 ~ UP E1-00164 ~ UP	FR-00103 ~ UP